

CLAIMS

1. A method of providing variable concentration fluid mixtures including the step of providing equal flows of at least first and second fluid components, selectively
5 switching the flows to a mixing stage for durations related to the intended concentration, wherein said selective switching provides an outputted fluid mixture at a substantially constant outward flow.
2. A method according to claim 1, including the step of mixing the
10 components through frequency multiplication.
3. A method according to claim 2, wherein frequency multiplication provides the steps of feeding the fluid mixture into an inlet of a frequency multiplier, passing the fluid mixture from the inlet through a plurality of spaced conduits to an outlet of the
15 frequency multiplier, the mixture passing through the plurality of conduits at different flow times, thereby providing frequency multiplication of concentration ripple.
4. A method according to claim 2 or 3, wherein the step of fluid multiplication multiplies the frequency of the concentration ripple and to divide its amplitude.
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5. A method according to any preceding claim, including the step of passing the fluid mixture through a plurality of integrating stages.
6. A method according to claim 5, wherein there are provided at least two
25 integrating stages.
7. A method according to any preceding claim, wherein the step of selectively switching the flows provides switching at a substantially constant frequency.
8. A method of modifying the ripple in a fluid mixture produced by mixing a
30 plurality of fluid components together including the step of feeding the fluid mixture

through a frequency multiplier which operates to multiply the frequency of the concentration ripple and to divide its amplitude.

9. A method according to claim 8, wherein the frequency multiplier provides
5 at least two times multiplication.

10. A method according to claim 8 or 9, including the step of feeding the fluid mixture through a plurality of integrating chambers.

10 11. A method of modifying the ripple in a fluid mixture produced by mixing a plurality of fluid components together including the step of feeding the fluid mixture through a plurality of integrating chambers.

12. Apparatus for modifying concentration ripple produced by mixing a
15 plurality of fluid components together including a mixture inlet, a mixture outlet and a plurality of conduits between the inlet and the outlet operable to allow passage of mixture from the inlet to the outlet at different flow times, thereby providing frequency multiplication of concentration ripple.

20 13. Apparatus according to claim 12, wherein the inlet and outlet are provided by first and second substantially concentric tubes closed at one end thereof and the conduits are provided as apertures in the innermost tube between inlet and outlet provided by the tubes.

25 14. Apparatus according to claim 13, wherein the inlet and outlet are provided by first and second adjacent tubes closed at one end thereof and the conduits are provided as capillaries between the inlet and outlet tubes.

30 15. Apparatus according to claim 14, wherein the adjacent tubes are located in a common housing and the capillaries are located in a wall separating the inlet and the outlet in the housing.

16. Apparatus according to any one of claims 12 to 15, wherein the spacing between adjacent conduits decreases from an entrance to each of the inlet and the outlet.

17. Apparatus according to any one of claims 12 to 15, wherein the
5 cross-sectional areas of each of the inlet and the outlet decreases from an entrance thereof.

18. Apparatus according to any one of claims 12 to 17, wherein the inlet and outlet and the conduits are formed of or coated with glass.

10 19. A fluid mixture integrating assembly including a plurality of integrating chambers.

20. A fluid mixing assembly including apparatus according to any one of claims 12 to 18 and/or a fluid mixture integrating assembly according to claim 19.

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21. A fluid mixing assembly according to claim 20, including flow devices operable to provide equal flows of first and second fluid components, switching means operable selectively to switch the flows to a mixing stage for durations related to the intended concentration, wherein said selective switching provides an outputted fluid
20 mixture at a substantially constant outward flow.